

ABSTRACT

The present invention relates to label switch networks and allows for reducing the processing cost and processing time required at each node when various services are performed with respect to traffic engineering in the label switch networks including a multi-protocol label switching (MPLS) network. In a label switch network system a first node that is disposed at the ingress of the label switch network transfers IP packets corresponding to IP flows based on labels, and that selects and sets up layer 2 paths for transferring the IP packets with reference to header or payload information of the IP packets. A plurality of second nodes may be disposed at intermediate points of the network and they set up the layer 2 paths from the ingress to the egress of the network following the specified routes and a third node is disposed at the egress of the network. A policy server instructs the first node to set up the layer 2 paths in compliance with policy control protocols when a user makes a request or a status change in the network arise, and intensively controls the first node, the second nodes and the third node.

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